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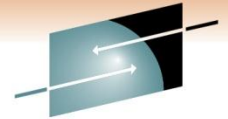
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When Worlds Collide – ISPF Tools for the Windows World

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March 3, 2011
Session #8363





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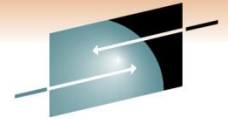
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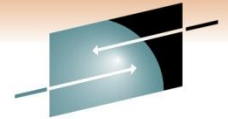


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Agenda

- Who is MIB?
- Introduction/Overview
- Mainframe E-Mail
- Network Printing
- File Handling and Moving
 - Accessing Mainframe files from Windows
 - Accessing Windows Server Files

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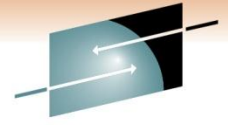


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Who is MIB?

- A membership corporation owned by approximately 470 member insurance companies in the US and Canada.
- Organized in 1902 to provide core fraud protection services to all aspects of the insurance industry, including, life, health, critical illness, long-term care and disability-income insurance.
- Provide members with shared, searchable databases to support the underwriting process. (Think “insurance credit bureau”)
- Adhere to all privacy and disclosure regulations, including FCRA (15 U.S.C. § 1681 et seq.) HIPAA (Public Law 104-191, 1996) and HITECH Act (H.R.1/P.L.-111-5, 2009)

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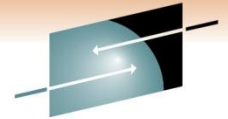
Introduction/Overview

- ISPF is the #1 SYSPROG tool.
- Most of us have a Windows device on our desk, network-attached printers near us, and communicate via e-mail.
- Often, the printers are not mainframe attached
 - High cost of products/infrastructure
- We use files on Mainframe as well as Windows Servers
- Getting Files from Mainframe may be cumbersome.
 - FTP (or IND\$FILE, or cut/paste) then:
 - Mail as attachment
 - Print to printer
 - Save to server

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Introduction/Overview (cont.)

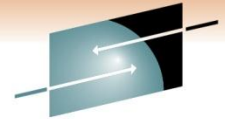
- A Better Way!
- Many tools available on the Internet which can be used as-is or tailored to your needs.
- Usually ISPF edit macros or TSO commands to assist in the integration of ISPF/TSO into the Windows world.
- The following Web sites are of particular use:
 - Marks Zelden's: <http://home.flash.net/~mzelden/mvsutil.html>
 - Dave Alcock's PlanetMvs:
<http://www.planetmvs.com/index.html>
 - Lionel Dyck's freeware site:
<http://www.lbdsoftware.com/index.htm>



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Mainframe E-Mail

- XMITIP by Lionel Dyke
- Freeware
- Very flexible
- Provides e-mail of text and attachments of files, and with additional features, will convert files to other formats such as PDF
- Uses the SMTP function of IBM Communications Server



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Mainframe E-Mail (cont.)

```
SYSA.WS - [32 x 80]
File Edit View Communication Actions Window Help
----- E-Mail Dialog 10.10 -----
Command ==> _
To Address ==> rfeak@mib.com
CC Address ==>
BCC Address ==>
AddressFile ==>
Subject ==> Test Message

Message/DS/DD/*/? ==>
Edit Message DSN ==> Yes or No

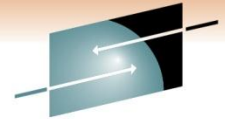
Attachment DSN/DD/? ==> lib.cntl(iefbr14)
File Name in e-Mail ==>
Format (?=prompt) ==>
Settings ==> Yes or No

Configuration File ==>
Default Settings ==> Yes or No to set From, ReplyTo, etc.
Delivery Settings ==> Yes or No (FollowUp, Import, Prior, Sens,
and Respond)

Execution Mode ==> ISPF I ISPF B Batch C Config P Prompt D Debug

Field level help available via PF1

M&A b 02/015
Connected to remote server /host SYSA.MIB.COM using lu/pool TCP00045 and port 23
```

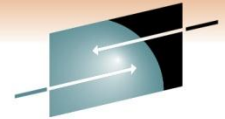
Mainframe E-Mail (cont.)

- With a little tailoring, a more seamless approach ...

```
SYSA.WS - [32 x 80]
File Edit View Communication Actions Window Help

EDIT @SYSRJF.LIB.CNTL(IEFBR14) - 01.36 Columns 00001 00072
Command ==> mailit Scroll ==> HALF
***** ***** Top of Data *****
000011 //@SYSRJFZ JOB 'ROD FEAK',MSGLEVEL=(1,1),MSGCLASS=X,CLASS=A,
000012 // REGION=0K,NOTIFY=@SYSRJF TYPRUN=SCAN
000423 //IEFBR14 EXEC PGM=IEFBR14,REGION=7900K
***** ***** Bottom of Data *****

MÁ a 02/021
Connected to remote server/host SYSA.MIB.COM using lu/pool TCP00006 a port 23
```

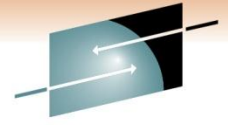


Mainframe E-mail (cont.)

The screenshot shows a terminal window titled 'SYSYA.WS - [32 x 80]' with a menu bar (File, Edit, View, Communication, Actions, Window, Help) and a toolbar. The main area displays the following text:

```
----- MIBMail SEND -----  
Command Input ==>  
  
Send file    ==> @SYSRJF.LIB.CNTL(IEFBR14)  
  From Line: ==> 1  
  To   Line: ==> 3  
  
To:          ==> TFERULLO           @MIB.COM   (E-Mail name)  
Format:      ==> T                 (W=Word, P=PDF, T=text, A=Ascii, X=CSV, Z=InlineText)  
                                     (S=Word-12pt-11x17)  
  
Carriage Ctl ==> N                 (YES=file has Carriage Control)  
Line Wrap:   ==> N                 (Y = Wrap long lines, N = Truncate)  
Subject:     ==>                   (Optional)  
Compression: ==> NO                (YES=file is to be sent as a Zipfile Attachment)  
  
This file is 3 lines long.  
Processed by SRS 6.5  
Press ENTER to Send, PF3 to Cancel  
  
(NOTE: Setting Line Wrap = 'Y' and Carriage Ctl = 'YES' may result in  
extra page-breaks in Word and PDF Files.)
```

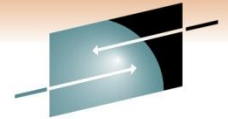
At the bottom of the terminal, there is a status bar with 'MÁ a' on the left, '14/020' on the right, and a connection message: 'Connected to remote server /host SYSYA.MIB.COM using lu/pool TCP00006 and port 23'.



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Mainframe E-Mail (cont.)

- At MIB, this solution utilizes a REXX ISPF Edit macro coupled with a background REXX SDSF-based writer to process both TSO and batch mail
- See SHARE – Seattle Presentation #2341: “SDSF Rexx in a Production Environment – User Experience” for a look at how this might be done.



Network Printing

- IBM Communications Server provides the TSO LPR command to print to a network-attached printer.
- Format:

```
>>-LPR--data_set_name--+-----+-----<<
| .-----|
| v                | |
'-(-----| Optional parameters |--'
```

where optional parameters specify things like the printer name and IP address, page layout, etc.

Network Printing (cont.)

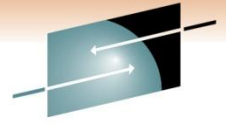
- Dave Alcock's LANPRT Rexx ISPF Edit macro allows one to print a range of lines, or all lines, from a dataset to a LAN printer.
- It invokes the LPR command from the Rexx code.

Accessing Mainframe Files from Windows



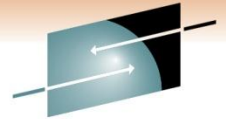
- IBM DSF (Distributed File Services) offers an SMB Server.
- Mainframe data can be offered to a Windows domain.
- The Mainframe looks like a Windows server to a Windows PC.
- OS datasets or USS files/directories can be mapped to windows drives.
- See SC24-5916 *DFS Customization*

Copying Mainframe Files to a Windows Server



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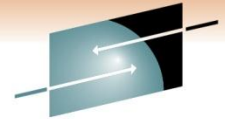
- Need a way to easily get mainframe files to a Windows server.
- FTP Server on Windows Server is a security issue.
- No easy way found on the Internet
- RYO
- Result: WINSAVE



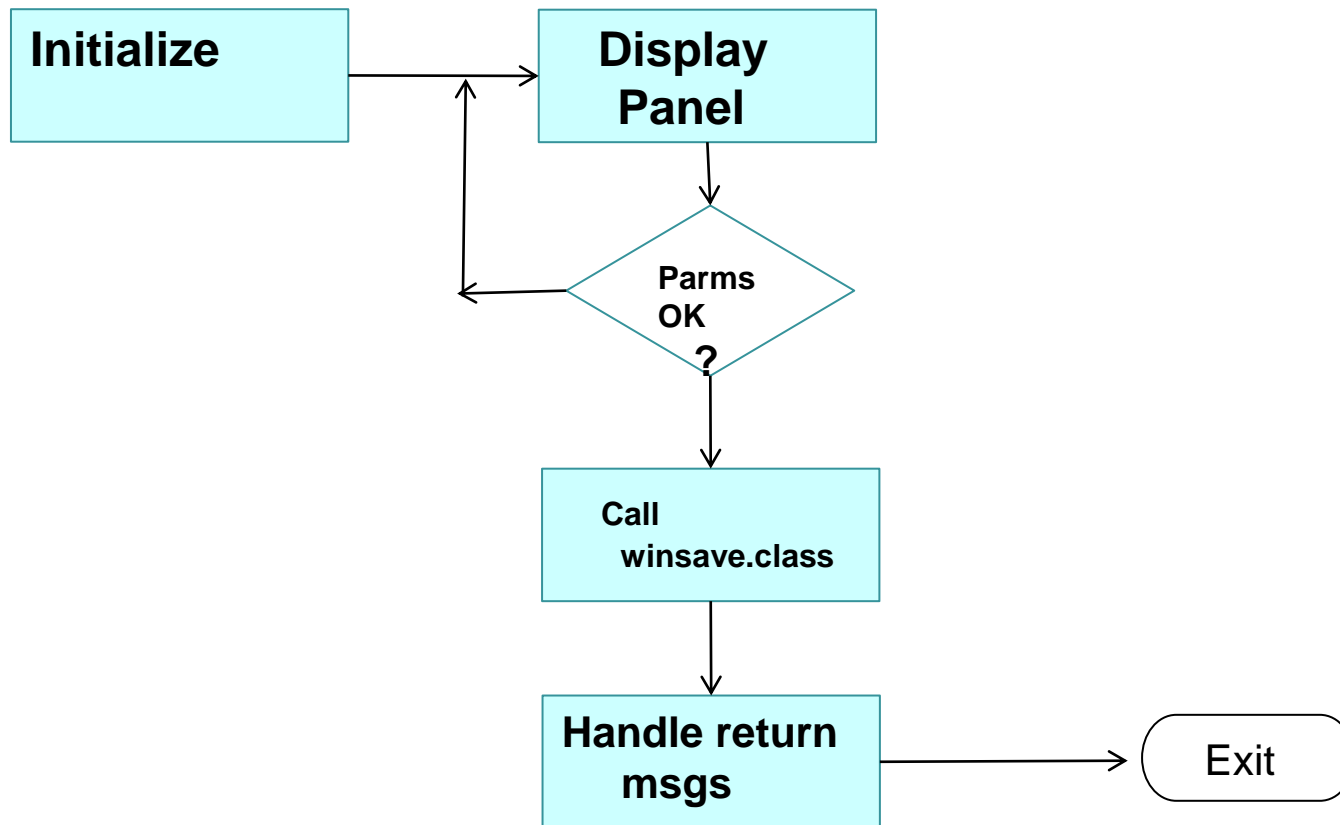
WINSAVE

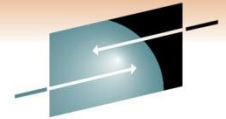
- Utilizes a Rexx ISPF edit macro that calls a Java program: Winsave
- Requires:
 - JCIFS java classes, open source which can be downloaded from jcfis.samba.org
 - JZOS java classes which come with IBM Java 1.6

JCIFS



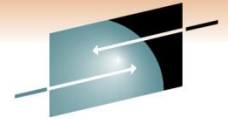
WINSAVE (Cont.)





WINSAVE Rexx Code

```
/* REXX */
/* Initialization for this environment */
/* Local Variables */
Domain      = "MIBNET1"    /* Windows Domain name */
TempUnit    = "SYSDA"     /* DASD Pool Esoteric for Temp
                          Datasets */
AllocUnits  = "CYLINDER" /* Space Units for allocation */
Primary     = "100"       /* Primary Space allocation */
Secondary   = "100"       /* Secondary Space allocation */
JavaCmd     = "/MIB/links/java/home/bin/java" /* location of
                                              java */
pgm         = "winsave"   /* name of java program */
cp1         = "/MIB/lib/jcifs-1.3.14.jar:/MIB/lib/"
              /* location of Program and utility jars */
```

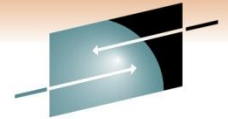


WINSAVE Rexx Code (cont.)

```
/* Environment Checks */
```

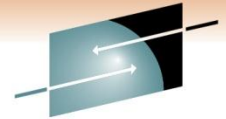
Code not shown

```
x = syscalls("ON")  
if x > 3 then  
  do  
    say "Cannot Establish a Unix Environment RC=" x  
    exit X  
  end
```



WINSAVE Rexx Code (cont.)

```
address ISREDIT
"MACRO (PARMS) NOPROCESS"
if rc <> 0 then
  do
    say "The WINSAVE command is only to be used as an Edit
Macro," ,
      "terminating..."
    exit 12
  end
```



WINSAVE Rexx Code (cont.)

```
/* Gather Variables */
```

```
"(OVDSN) = DATASET"
```

```
"(MEMBER) = MEMBER"
```

```
ADDRESS ISPEXEC "VGET (ISFHEAD) SHARED"
```

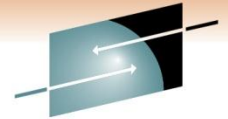
```
ADDRESS ISPEXEC "VGET (WLGSERVER) PROFILE"
```

```
ADDRESS ISPEXEC "VGET (WLGWFOLD) PROFILE"
```

```
ADDRESS ISPEXEC "VGET (WINFFILE) PROFILE"
```

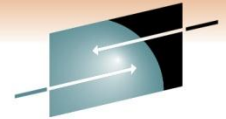
```
ADDRESS ISPEXEC "VGET (WINUSER) PROFILE"
```

```
ADDRESS ISPEXEC "VGET (WINOVER) PROFILE"
```



WINSAVE Rexx Code (cont.)

```
select
when ovdsn <> '' then
  do
    if POS('/',ovdsn) <> 0 then
      member = ''
    end
  when isfhead <> '' then
    do
      parse var isfhead jobname jobnum
      ovdsn = jobname
      member = ''
    end
  otherwise
    nop
end
```



WINSAVE Rexx Code (cont.)

```
/* Process Range of Lines or Whole Dataset */
```

```
Code not shown
```

```
/*Build Panel*/
```

```
ZSRVER = WLGSERVER
```

```
ZWINFOLD = WLGWFOLD
```

```
ZWINFILE = WINFFILE
```

```
ZWUSR = WINUSER
```

```
ZOVER = WINOVER
```

```
ZWPASS = ""
```

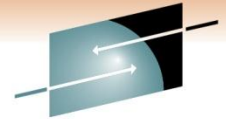
```
ZWPAS2 = ""
```

```
if MEMBER <> ' ' then
```

```
    ZDSN = OVDSN || '(' || MEMBER || ') '
```

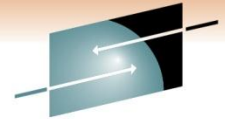
```
else
```

```
    ZDSN = OVDSN
```



WINSAVE Rexx Code (cont.)

```
/*Display Panel*/  
bExit      = 0  
bGoodtoGo = 0  
do while \bExit  
    zcmd = ''  
    ADDRESS ISPEXEC "DISPLAY PANEL(WINSAVEP) "  
    ZEDSMSG = ""  
    strCmd = translate(zcmd)
```

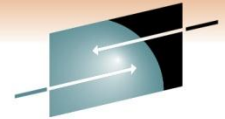



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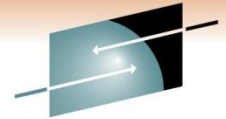
WINSAVE Rexx Code (cont.)

```
SYSC.WS - [32 x 80]
File Edit View Communication Actions Window Help
VIEW @SYSRJF.LIB.CNTL($BLOCK) - 01.00 Columns 00001 00072
Command ==> winsave Scroll ==> HALF
***** Top of Data *****
000100 //FEAKX JOB 216601, 'FEAK', CLASS=R,
000200 // MSGCLASS=X,MSGLEVEL=(1,1),NOTIFY=FEAK
000300 //ASMFCL PROC MAC='SYS2.MACLIB',
000400 // MAC1='SYS1.MACLIB',
000500 // INDSN='FEAK.LIB.ASM',
000600 // MEMBER=,
000700 // PGMNAME=,
000800 // LPARMS=,
000900 // GOSET='FEAK.LIB.LINKLIB'
001000 //ASM EXEC PGM=ASMA90, PARM='OBJECT,NODECK'
001100 //SYSLIB DD DSN=FEAK.LIB.MACLIB, DISP=SHR
001200 // DD DSN=&MAC, DISP=SHR
001300 // DD DSN=&MAC1, DISP=SHR
001310 // DD DSN=SYS1.AMODGEN, DISP=SHR
001400 //SYSUT1 DD DSN=&&SYSUT1, UNIT=VIO, SPACE=(1700, (600, 100))
001700 //SYSPRINT DD SYSOUT=*, DCB=BLKSIZE=1089
001800 //SYSPUNCH DD SYSOUT=B
001900 //SYSIN DD DSN=&INDSN(&MEMBER), DISP=SHR
002000 //SYSLIN DD DSN=&&OBJSET, UNIT=VIO, SPACE=(80, (200, 50)),
002100 // DISP=(MOD, PASS)
002200 //LKED EXEC PGM=IEWL, PARM=('XREF, LET, LIST, &LPARMS'),
002300 // COND=(8, LT, ASM)
002400 //SYSLIB DD DSN=FEAK.LIB.LINKLIB, DISP=SHR
002500 //SYSLIN DD DSN=&&OBJSET, DISP=(OLD, DELETE)
002510 // DD DDNAME=SYSIN
002600 //SYSLMOD DD DSN=&GOSET(&PGMNAME), DISP=SHR
002700 //SYSUT1 DD DSN=&&SYSUT1, UNIT=VIO, SPACE=(1024, (50, 20))
002800 //SYSPRINT DD SYSOUT=*, DCB=(RECFM=FB, LRECL=121, BLKSIZE=1210)
002900 // PEND
MA b 02/022
Connected to remote server/host SYSC.MIB.COM using lu/pool TCP00010 and port 23
```



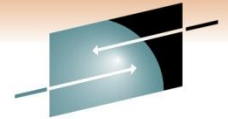
WINSAVE Rexx Code (cont.)

```
SYSC.WS - [32 x 80]
File Edit View Communication Actions Window Help
-----
WINSAVE - Copy to a Windows File
OPTION ==> _____
-----
Dataset: SYS1.SYSTEMS.CLIST(WINSAVE)
Windows Server Share:..... //Dr1/admin/mf/DR
                               Ex. //server/share
Output Windows Folder Name: Test_Folder2
Output Windows Filename:... DR Rexx5 .txt
Windows Userid:..... rfeak
Password:..... Password is
Re-Enter:..... case sensitive.
Overwrite existing File:... Y (Y or N)
(You must have the proper authority on the Server to save files and create
directories)
Enter = Continue PF3 = Cancel
-----
Mf b 14/031
Connected to remote server/host SYSC.MIB.COM using lu/pool TCP00010 and port 23
```



WINSAVE Rexx Code (cont.)

```
if word(zcmd,1) = 'can' | word(zcmd,1) = 'CAN' | rc = 8
  then
    do
      ZEDSMSG = "WINSAVE Cancelled."
      ZEDLMSG = "WINSAVE Processing
Cancelled."
      ADDRESS ISPEXEC "SETMSG MSG(ISRZ001)"
      /* msg - with alarm */
      bExit = 1
      iterate
    end
  Call Panel_Process
```



WINSAVE Rexx Code (cont.)

```
if bGoodtoGo then
    do
        Call Call_Java
        bGoodtoGo = 0
    end
end
```

end

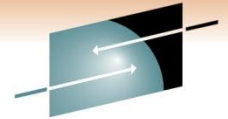
/ SAVE variables */*

Code not shown

Exit

/ Process Panel*/*

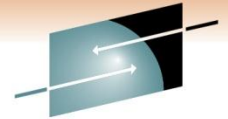
Code not shown



WINSAVE Rexx Code (cont.)

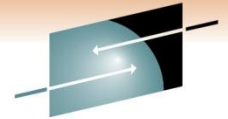
Call_Java:

```
/* Allocate a Work File and write all lines to it*/  
Code not shown  
/* Setup and call the JCIFS java */  
r1  = '''||ZSRVER||"/'  
r2  = '''||ZWINFOLD||''''  
r3  = ZWUSR  
r4  = ZWPASS  
r5  = lpfwrkf_dsn  
r6  = '''||ZWINFILE||''''  
r7  = ZOVER  
r8  = Domain  
in.0 = 0  
env.0 = 1  
env.1 = './etc/profile'  
cmd = JavaCmd "-cp" cp1 pgm r1 r2 r3 r4 r5 r6 r7 r8
```



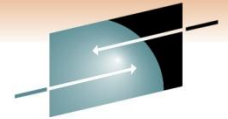
WINSAVE Rexx Code (cont.)

```
/*Call Java code to copy to windows */  
address ISPEXEC "CONTROL DISPLAY LOCK"  
address ISPEXEC "ADDPOP ROW(15) COLUMN(15) "  
address ISPEXEC "DISPLAY PANEL(WINSAVEQ) "  
  
call bpxwunix cmd,in.,out.,err.,env.  
  
address ISPEXEC "REMPop"  
/*Clean up and provide message(s) to user */  
Code not Shown
```



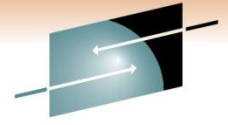
WINSAVE Java Code

```
// Source File Name:    winsave.java
import com.ibm.jzos.ZFile;
import com.ibm.jzos.ZUtil;
import java.io.BufferedReader;
import java.io.File;
import java.io.FileInputStream;
import java.io.InputStream;
import java.io.InputStreamReader;
import java.io.PrintStream;
import java.io.Reader;
import jcifs.smb.NtlmPasswordAuthentication;
import jcifs.smb.SmbFile;
import jcifs.smb.SmbFileOutputStream;
```



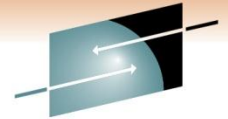
WINSAVE Java Code (cont.)

```
public class winsave {
    public static void main(String[] args) {
        try{
// Parse parameters
            String  Server      = args[0];
            String  url         = "smb:" + Server;
            String  DirName     = args[1];
            String  UserId      = args[2];
            String  Password    = args[3];
            String  zosds       = args[4];
            String  FileName    = args[5];
            String  OverWrite   = args[6];
            String  Domain      = args[7];
```

WINSAVE Java Code (cont.)

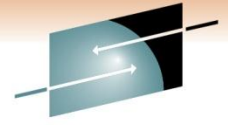
```
// Get Authorization
    NtlmPasswordAuthentication auth = new
        NtlmPasswordAuthentication(Domain, UserId, Password);
// Connect to Share
    SmbFile Share = new SmbFile(url, auth);
// Get list of Folders and Files
    SmbFile[] dirlist = Share.listFiles();
// Locate Folder if it exists
    int iflag = 0;
    for (int i=0; i<dirlist.length; i++) {
        String FolderName = dirlist[i].getName();
        if (FolderName.equals(DirName+"/"))
            {
                iflag = 1;
            }
    }
```



WINSAVE Java Code (cont.)

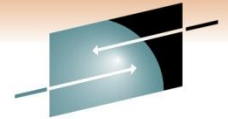
```
// Create new Folder if required
String WorkDir = url + DirName + "/";
if (iflag == 0) {
    SmbFile newDir = new SmbFile(WorkDir, auth);
    newDir.mkdir();
}

// Set Up Output File
FileName = FileName + ".txt";
String WorkFile = WorkDir + FileName;
SmbFile newFile = new SmbFile(WorkFile, auth);
```



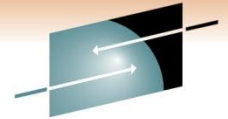
WINSAVE Java Code (cont.)

```
if (newFile.exists() && OverWrite.equals("N")) {
    System.out.println("WFRC=4");
}
else {
    int OwriteFlag = 0;
    if (newFile.exists()) {
        newFile.delete();
        OwriteFlag = 1;
    }
    newFile.createNewFile();
    SmbFileOutputStream out = new SmbFileOutputStream(newFile);
```



WINSAVE Java Code (cont.)

```
// Set Up Input File
    ZFile zFile = new ZFile("//'" + zosds + "'",
    "rb,type=record,noseek");
// Copy Input to Output
    byte[] recBuf = new byte[zFile.getLrecl()];
    String enc = ZUtil.getDefaultPlatformEncoding();
    int nRead;
    while((nRead = zFile.read(recBuf)) > 0) {
        String line = new String(recBuf, 0, nRead, enc);
        line = line + "\r\n";
        out.write(line.getBytes("ASCII"));
    } ;
} ;
```

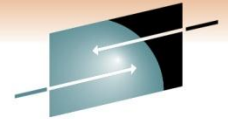


WINSAVE Java Code (cont.)

```
// Close Input and Output
    zFile.close();
    out.close();
    if (OwriteFlag == 0) {
        System.out.println("WFRC=0");
    }
    else {
        System.out.println("WFRC=1");
    }
}

// Catch Exceptions
} catch (Exception e) {
System.out.println(e);
} }
```

Questions



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